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A

MONOGRAPH

OF THE

TROGONIDÆ,

OR

TROGONS.

BY

JOHN GOULD, F.R.S. &c.

TO BE COMPLETED IN FOUR PARTS.

PART III.

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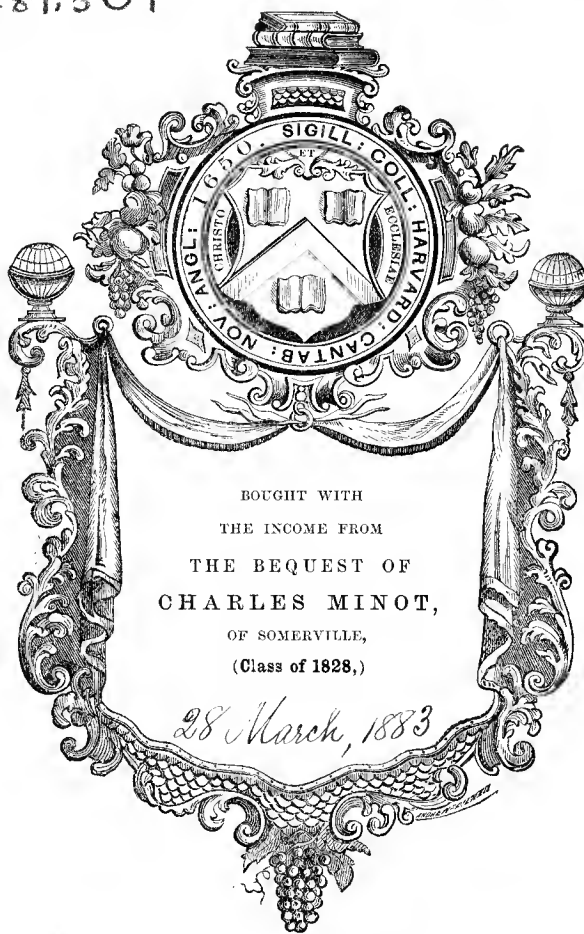
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PHAROMACRUS MOCINNO.

PHAROMACRUS MOCINNO.

Quezal.

SPECIFIC CHARACTER.

Trog. cristatus; *tectricibus caudæ superioribus longissimis tripedalibus*; *suprà et ad guttur pectusque splendide aureo-viridis*; *ventre crissoque coccineis*; *rectricibus sex intermediis nigris, reliquis albis ad basin tantummodo nigris*.

Æm. vel Junior. *Capite, gutture pectoreque obscure viridibus*; *dorso viridi*; *ventre cinerascenti-brunneo*; *crisso coccineo*; *capite subcristato*; *tectricibus caudæ superioribus brevibus*; *rectricibus externis albis nigro fasciatis*.

Rostrum flavum, in junioribus (?) nigrum; *tarsi brunnei*.

Beak gamboge yellow; head covered with long filamentous plumes forming a rounded crest; from the shoulders spring a number of lance-shaped feathers, which hang gracefully over the wings; from the rump are thrown off several pairs of narrow flowing plumes, the longest of which, in fine adults, measure from three feet to three feet four inches; the others gradually diminishing in length towards the rump, where they again assume the form of the feathers of the back; these plumes, together with the whole of the upper surface, throat, and chest, are of a most resplendent golden green; the breast, belly, and vent are of a rich crimson scarlet; the middle feathers of the tail black; the six outer ones white for nearly the whole length, their bases being black; feet brown.

Total length, from the bill to the end of the tail, 12 to 14 inches; wing 8 to 9; tail 8 to 9; tarsi 1; length of longest plume about 3 feet.

The female or young of the year have only rudiments of the long plumes, seldom reaching more than an inch beyond the tip of the tail; the feathers of the crest are more rounded and not filamentous; the feathers of the shoulders but slightly lanceolate; the outer tail-feathers white barred with black, the centre ones black; the whole of the chest, throat, and head obscure green, the remainder of the upper surface bright green; the breast and belly greyish brown; vent fine scarlet; bill black.

Trogon pavoninus. Temm. Pl. Col. 372 (not of Spix).

Pharomacrus mocinno. La Llave, Registr. Trim. i. p. 48 (1831).

Trogon resplendens. Gould, P. Z. S. 1835, p. 29.

——— *paradiseus*. Bp. P. Z. S. 1837, p. 101 (1826, ubi?).

Calurus resplendens. Gould, Mon. Trog. ed. 1.

Pharomacrus paradiseus. Salv. Ibis, 1861, p. 138.

It is scarcely possible for the imagination to conceive any thing more rich and gorgeous than the golden-green colour which adorns the principal part of the plumage of this splendid bird, or more elegant and graceful than the flowing plumes which sweep pendent from the lower part of the back, forming a long train of metallic brilliancy. Nature appears to have ordained that birds possessing unusual brilliancy of plumage should be inhabitants of retired and obscure situations; and in strict conformity with this law the Quezal, by far the most beautiful of its tribe, is to be found in the most dense and gloomy forests, remote from the haunts of civilized man, which may, perhaps, account for its being so little known to Europeans until within the last few years; for although the long plumes were used to adorn the head-dresses of the ancient Mexicans, and at a later period were transmitted by the Spaniards from time to time to Europe, yet it is only very recently that we have become acquainted with the entire bird. I believe the first perfect example was received by

the late Right Hon. George Canning ; after that statesman's decease it passed into the hands of Mr. Leadbeater. The representation of this bird in the 'Planches Coloriées' of M. Temminck is undoubtedly the first that was published ; but the author evidently confounded it with a nearly allied species discovered in Brazil, and figured in the 'Avium Species Novæ' &c. of Dr. Spix.

The principal part of the above remarks was published in a former edition of this work nearly thirty years ago. In the long interval which has elapsed much additional information has been obtained respecting this fine bird ; and I am greatly indebted to Mr. Osbert Salvin for the full and interesting statement subjoined, which I am sure will be read by every ornithologist with the greatest pleasure :—

“In the 'Ornithology' of Francis Willughby (edited by John Ray, Fellow of the Royal Society, and published in the year 1678), page 385, will be found 'An Appendix to the History of Birds, containing such Birds as we suspect for fabulous, or such as are too briefly and inaccurately described to give us a full and sufficient knowledge of them, taken out of Franc. Hernandez especially.' Under the heading 'Of fair-feathered Birds' Willughby translates from Hernandez as follows :—'Its feathers have made the Quetzal-tototl more precious than gold ; and therefore it is called the *bird of feathers*. It hath a crest, and is in good part adorned with Peacocks' feathers, of the bigness of a *Pie* or *Pigeon*, having a crooked yellow Bill, and Feet something yellow. The Tail is composed of very long feathers of a shining green and of a Peacock colour, like for shape to the leaves of *Flouer-de-luce*, and covered above with other black ones, but beneath and where they touch the Peacock-coloured or purple ones (which are in the middle) inclining to green, as if nature took care of the beauty of the middle feathers. The crest consists of shining and very beautiful feathers. The breast and neck underneath are covered with a red and shining plumage, and with a purple [pavoninâ], as is also the back and sides under the wings and the belly between the legs ; but the feathers in this last place are of a fainter colour, slender, and soft. The feathers of the wings are very long, tintured with a dilute green and ending in sharp points. The feathers growing on the shoulders are green, but black underneath ; but those between the wings are sometimes crooked and of the colour of the claws. The feathers of this bird are highly esteemed among the *Indians*, and preferred even before gold itself—the longer ones for crests and other ornaments, both of the head and whole body, both for War and Peace, but the rest for setting in feather-works and composing the figures of saints and other things, which they are so skilful in doing as not to fall short of the most artificial pictures drawn in colours. For this purpose they also mingle and weave in together with these the feathers of the *Humming Bird*. These birds live in the province of *Tocolotlan*, beyond *Quantemallam*, towards *Honduras*, where great care is taken that no man kill them. Only it is lawful to pluck off their feathers, and so let them go naked ; yet not for all men indifferently, but only for the lords and proprietors of them ; for they descend to the heirs as rich possessions. *Francisco Hernandez*, in some pretermitted annotations, adds concerning the taking these birds some things worth the knowing. The fowlers (saith he) betake themselves to the mountains, and, there hiding themselves in small cottages, scatter up and down boiled *Indian* wheat, and prick down in the ground many rods besmeared with birdlime, wherewith the birds entangled become their prey. They fly in flocks among trees, on which they are wont to sit, making no unpleasant noise with their whistling and singing in consort. They have by the instinct of nature such knowledge of their riches that, once sticking to the birdlime, they remain still and quiet, not struggling at all, that they may not mar or injure their feathers. The beauty whereof they are so in love with that they choose rather to be taken and killed than, by endeavouring to get their liberty, do any thing that may deface or prejudice them. They are said to pick holes in trees and therein to build and breed up their young. They feed upon worms and certain wild *Pinnæ* of that sort which Mexicans are wont to call *Matzatli*. They love the open air, nor hath it been yet found that ever they would be kept tame or brought up in houses. They make a noise not much unlike *Parrots*, but they have a cheerful and pleasant whistle and they sing thrice a day, to wit, in the morning, at noon, and about sunset.'

“Thus wrote Hernandez now two hundred years ago ; and Willughby, his translator, evidently doubted the existence of such a bird as his Quetzal-tototl. It was not until the year 1825 that a magnificent bird of the family of the Trogons was made known to science, which can be no other than the bird Hernandez described so many years before. When seeking for objects for illustration in his well-known work the 'Planches Coloriées des Oiseaux,' M. Temminck had lent to him by Mr. Leadbeater a bird which he described and figured (Pl. 372) under the name *Trogon pavoninus*, supposing the species to be the same as one then recently described by the Brazilian traveller, Spix, under that name. In 1831, however, De la Llave renamed the same bird, bestowing upon it the barbarous title *Mocinno*, under which it is now known to the

scientific ornithologist. Still, neither were Hernandez's notes confirmed, nor was there any thing further recorded respecting the habits of the species, nor yet were the localities frequented by it sufficiently known until the French traveller De Lattre described his visit to its haunts in Vera Paz in the 'Echo du Monde Savant,' in an article which was afterwards reprinted in the 'Revue Zoologique' for 1843. From about this date specimens began to be sent to Europe in some numbers, so that the Quezal was henceforth a well-known bird.

"In the month of March in the year 1860, during one of my ornithological rambles in Guatemala (the *Quantemallam* of Hernandez), I found myself at Coban, the chief town of the Department of Vera Paz, and in the very centre of the districts in which *Pharomacrus mocinno*, or Quezal, is found. From here I made an excursion into the mountains lying to the eastward of Coban for the express purpose of hunting up Trogons in their native haunts, and took with me two of the most experienced Quezal-hunters of Vera Paz. The same afternoon that we reached the forests we intended to explore I was rewarded by securing my first Quezal. We had just started after resting in a deserted rancho of an Indian, and were making our way to the forest across the old corn-patch through which the track passed. I was threading my way amongst the decaying trunks of the felled trees, when Filipe, one of my hunters, came running back to say that Cipriano, the other, had heard a Quezal. Being most anxious to see this bird myself, as well as to be able to boast of its having fallen to my own gun, I hurried up, sat down on my wide-awake in most approved style close to Cipriano, who was calling the bird, and waited, all eyes and ears, for the result. I had not to wait long; for a distant clattering note warned us that the bird was on the wing, and a moment afterwards there sat on a bough not seventy yards before me a splendid male,—a sight that alone made up for all the toil and disappointments of the previous days. Cipriano wanted to creep up to within shot; but I kept him back, not wishing to lose such an opportunity of watching the actions of this grand bird in its natural state. It sat, as other Trogons do, almost motionless on its perch, the body remaining balanced upon its tiny feet in the same position, the head only being moved occasionally in a slow deliberate way from side to side. The tail was not suspended quite perpendicularly, but hung at an angle of as much as 15 or 20 degrees to the vertical line, and was jerked open and closed again suddenly every now and then, causing the long pendent tail-coverts to vibrate gracefully as they swung in the air. I had not seen all; for a ripe fruit caught the bird's eye, and in a moment he sprang from his perch, all life and activity, plucked the berry and returned to his resting-place. This performance displayed the gorgeous colouring of the bird to the greatest possible advantage. How common a remark it is of people, when looking at stuffed specimens of Humming-birds, 'What lovely little things these must look in life when they are flying about!' But it is not so, as will be at once seen by placing a Humming-bird twenty yards from you. At that distance how faintly do the brilliant colours show, except in the most favourable light and position. This is not the case with the Quezal, whose brilliant colours reflect themselves in every light. The rich metallic green which forms the chief colour is lustrous, from whatever position it is viewed; and when seen in combination with the deep scarlet of the breast and the pure white of the tail its vividness is, if any thing, enhanced. The brilliant plumage of the living Quezal arrests the eye at once; and thus clothed the bird stands unrivalled, even amongst the feathered denizens of the American tropics. The Birds of Paradise alone hardly surpass it amongst the birds of the east. Such were my passing reflections as I sat with the living Quezal before me, when a low whistle from Cipriano cut my observations short, and the bird, settling on a nearer bough, was a moment afterwards in my hands—the first Quezal I had seen and shot.

"The cries of the Quezal are various. They consist principally of a low double note, *whe-oo, whe-oo*, which the bird repeats, whistling it softly at first and then gradually swelling it into a loud but not unmelodious cry. This is often succeeded by a long note, which begins low, and after swelling dies away as it began. Both these notes can be easily imitated by the human voice. The bird's other cries are harsh and discordant. They are best imitated by doubling a pliant leaf over the first fingers, which must be held about two inches apart: the two edges of the leaf being then placed in the mouth and the breath drawn in, the required sound is produced. Cipriano was an adept at imitating these cries; but I failed to produce them for want of practice. When searching for Quezals the hunter whistles as he walks along, here and there sitting down and repeating the other notes. As soon as he hears a bird answering at a distance, he stops, and imitates the bird's cries until it has approached near enough to enable him to shoot it from where he stands, or to creep up to within shot. The female generally flies up first, and perches on a tree near the hunter, who takes no notice of her, but continues calling till the male (who usually quickly follows the female) appears. Should the male not show himself, the hunter will sometimes shoot the female. The flight of the

Quezal is rapid and straight; the long tail-feathers, which never seem to be in his way, stream after him. The bird is never found but in forests composed of the highest trees, the lower branches of which (*i. e.* those at about two thirds of the height of the tree from the ground) seem to be its favourite resort. Its food consists principally of fruit; but occasionally a caterpillar may be found in its stomach.

"Sometimes several males are found together; and then the scene is most exciting as they fly to and fro, their long tails streaming after them.

"Besides the mountains in the neighbourhood of Coban, Quezals are found in several other parts of Guatemala, indeed wherever forests of sufficient extent exist, at elevations varying from 6000 to 8000 or 9000 feet above the sea-level. Such forests are to be seen in the district of San Antonio or Chilasco, above the plain of Salania in Vera Paz, in the high range of Chiantla, the southern slopes of the great Cordillera, below Quezaltenango, and in the volcanoes of Agua and Fuego. From all these places I have seen specimens; and in one of the ravines of the last-mentioned, Mr. Godman, who travelled with me in 1861-62, shot a male with the tail-feathers nearly fully grown in the month of December. The months of February, March, and April, however, are the months when the tails reach their full development."

"The only authentic account of the nesting-habits of the Quezal are given by Mr. Robert Owen in 'The Ibis' for 1861, p. 66. He there says:—"In an expedition to the mountain of Santa Cruz [Vera Paz], one of our hunters told me that he knew of a Quezal's nest about a league from Chilasco, a place in the same range, and offered to shoot for me the female and bring me the eggs if I would send my servant to help him. This I accordingly did; and my man returned with the hen and two eggs. They stated that they found the nest in a hollow of a decayed forest-tree, about 26 feet from the ground. There was but one orifice, not more than sufficiently large to allow the bird to enter; and the whole interior cavity was barely large enough to admit of the bird turning round. Inside there were no signs of a nest beyond a layer of small particles of decayed wood, upon which the eggs were deposited. The mountaineers all say that the bird avails itself of the deserted hole of a Woodpecker for its nesting-place, probably founding the supposition on the evident inaptness of the bird's beak for boring into trees."

These eggs are of a bluish green colour, without spots or markings, their form is a roundish oval, only slightly more tapering at one end. They measure—axis 1·4 inch, diameter 1·15 inch.

Considerable variation can be seen in the dimensions of the long caudal plumes of this bird, even in specimens all coming from the same country; some have the central coverts as broad as the hand and a yard and a quarter long, whilst others are much narrower.

In the southern district of its range (Costa Rica and Veragua) these narrow-feathered birds are alone found; and upon this character chiefly the bird from those countries has been called by Dr. Cabanis *Pharomacrus Costaricensis*; but the difference seems to be hardly sufficiently pronounced to warrant the separation of the two birds. In Veragua, specimens have been sent me from Chiriqui and the higher Cordillera eastward of that volcano as far as Calovevora, which lies to the northward of the village of Calobre. Beyond this point to the south-east Quezals have not been observed, the low-lying lands of the Isthmus of Panama possessing a hot climate unsuited to their economy.

The figures in the accompanying Plate are taken less than the natural size.

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TROGON MEXICANUS, Sw.

TROGON MEXICANUS, Swainson.

Mexican Trogon.

SPECIFIC CHARACTER.

Trog. supra nitenti-viridis, pectore dorsoque concoloribus; gutture, regione auriculari alisque nigris, his cinereo punctatis; torque pectorali albâ; ventre crissoque coccineis; reatricibus duabus intermediis viridibus nigro terminatis, duabus proximis utrinque nigris, reliquis basaliter nigris latè albo terminaliter fasciatis.

Fœm. Suprà olivascenti-brunnea, pectore dorsoque concoloribus, hœc vix rufescente lavato; torque pectorali cinerascence obsoletâ; corpore reliquo subtùs coccineo; alis nigris brunneo parcè maculatis; remigibus externis albo fimbriatis; reatricibus duabus intermediis castaneis nigro apicatis, duabus proximis utrinque nigris, reliquis albo nigroque fasciatis; rostro brunneo, mandibulâ flavâ.

Adult male.—Beak bright yellow; throat and ear-coverts black, gradually blending with the green which covers the chest and the whole of the upper surface; two centre tail-feathers green, with black tips, the two next on each side wholly black, the three outer feathers on each side black, with white tips; wings black, with the exception of the primaries dotted with grey; on the chest a crescentic band of white; breast, belly, and under tail-coverts a fine scarlet; feet brown.

Total length from 11 to 12 inches; wing $5\frac{3}{4}$; tail $7\frac{3}{4}$.

Adult female.—The top of the head, throat, chest, and back dark brown, inclining to olive on the upper surface and to rufous on the chest; across the latter an obscure band of light grey; the upper part of the belly brownish grey, the lower part and vent scarlet; wings black, slightly freckled with brown on the outer edges of the secondaries and shoulders, the outer edges of the primaries fringed with white; two middle tail-feathers chestnut-brown tipped with black, the two next on each side wholly black, the remainder strongly barred with black and white for nearly their whole length; bill yellow, clouded with brown.

Trogon mexicanus. Swains. Phil. Mag. 1827, p. 440.—Id. Zool. Illustr. 2nd ser. pls. 82, 107.—Gould, Monogr. Trogon. pls. 1, 2.—Gray, Gen. B. i. p. 70.—Id. Cat. Fissir. Brit. Mus. p. 41.—Bp. Consp. i. p. 150.—Selater, P. Z. S. 1858, pp. 367, 387.—Scl. & Salv. Ibis, 1859, p. 132, et 1860, p. 41.—Selater, Cat. Am. B. p. 276.—Cab. & Heine, Mus. Hein. iv. p. 168.—Gray, Hand-l. B. i. p. 82.—Scl. & Salv. Nomencl. Av. Neotr. p. 103.

——— *glocitans*, Licht. Preisverz. mex. Th. v. Deppe u. Schiede, p. 1, et Journ. f. Orn. 1863, p. 55.

“——— *morgani*, Swains.” Gould, Mon. Trog. ed. 1.

Trogonurus mexicanus. Bp. Consp. Vol. Zyg. p. 14.

SINCE the first edition of the present Monograph but little has been added to the history of this beautiful Trogon. Great difficulty often attaches to the identification of the young male, which differs from the adult in having white bars on the tail-feathers. However, in the other edition, I was able to figure a young male, lent me by Mr. John Taylor, which shows the assumption of the uniform black tail, and thus precludes the idea that these individuals with different-coloured tails belong to different species. Mr. Taylor's specimens

were from Real del Monte, in Mexico ; and it has been collected at Oaxaca by M. Boucard, and at Jalapa by De Oca. Although chiefly known from Mexico, this species goes as far as Guatemala, where Mr. Salvin met with it on the Volcan de Fuego. He gives the following note respecting the species :—"The colour of the eyelid of this species, both in the male and female, almost exactly corresponds with the red colour of the breast in each, that of the male being much more brilliant than that of the female, in fact bearing the same ratio to it as the colour of its breast to that of the female's breast. It is probable that in many cases the colour of the soft parts about the eye &c. may be determined by reference to some portion or portions of the plumage where it is exactly represented. In the Trogons this seems eminently the case. A few days ago I shot a pair of *Trogon caligatus*, in which the colour of the eyelid in the male was exactly represented by the colour of the yellow breast, that of the female by the fainter yellow of its breast. The same is the case with *T. puella*. I think, therefore, that with tolerable safety the eyelids of these American Trogons may be said to correspond with the colour of the breast. It certainly is true in all cases which I have noticed."

The following has been kindly sent to me by Mr. Salvin :—

"The Mexican Trogon, as its name implies, is found in Mexico ; and, as collections made in the highlands of that country seldom fail to contain examples, it would appear to be a common bird. Besides the valley of Mexico, it occurs in the State of Vera Cruz, whence specimens have been forwarded from Jalapa by M. de Oca. Mons. A. Boucard, too, found it in the State of Oaxaca, near Cinco Señores. In Guatemala *Trogon mexicanus* enjoys a wide range throughout the higher districts. I met with it in the Volcan de Fuego and also in Vera Paz, near Coban, in the valley of the Motagua, as well as in the woods overlooking the Plain of Salamá ; and it is doubtless to be seen in all suitable forests in the mountainous districts. Guatemala, however, would appear to be the extent of its range in a south-easterly direction, as it has not yet been noticed in any of the other Central-American republics.

"Like other members of this family, *Trogon mexicanus* is found in forests, usually sitting on the lower branches of the high trees. When at rest it sits almost motionless ; but its flight from one branch to another is quick though not sustained, as they never fly far. I found them most abundant in evergreen-oak woods. These oaks clothe, with greater or less density, the mountain-sides from an elevation of 5000 to about 7500 feet, and some of them (for there are many species in Guatemala) grow into magnificent trees. *Trogon mexicanus*, however, does not keep strictly to the oak-woods, for on one occasion I was lucky enough to be shown a nest in a tree forming part of a scrubby forest at an elevation of not more than 3000 feet, *i. e.* considerably below the oak-region. This was at a place called Chuacus, a small village in Vera Paz, situated in a valley which runs into the great valley of the river Motagua. This nest was in a hole in the bole of a small tree, about 15 or 20 feet from the ground. The male bird flew out, and I secured the eggs, three in number. They were slightly pointed, and of a very pale greenish colour, not pure white when fresh. There was no nest, the eggs being laid on the floor of the hole."

The young male of this species has bars on the tail, which would lead many persons to suppose pertained to another ; but this is not the case.

Nothing further seems to have been recorded respecting the habits and economy of the Mexican Trogon. The figures are from a pair of birds in my own collection.

The Plate represents male and female, of the size of life.

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TROGON CLATHRATUS, *Salvin.*

TROGON CLATHRATUS, *Salvin.*

The Lattice-tailed Trogon.

SPECIFIC CHARACTER.

Trog. splendide viridis, vix aureo nitens; pileo cyanescente; facie laterali gulâque nigris; jugulo et pectore superiore dorso concoloribus; corpore reliquo subtus lætè coccineo; alis nigris, tectricibus alarum minoribus viridibus, reliquis autem et remigum secundariorum pogonio externo cinereis minutè nigro transvermiculatis; caudâ nigro terminatâ, rectricibus duabus mediis omnino viridibus, proximis duabus extus viridibus intus nigricantibus, reliquis quatuor utrinque nigris angustè albido transversim lineatis.

Fœm. Saturatè cinerea, alis et caudâ nigricantioribus; rectricibus tribus externis albo angustè transfasciatis; abdomine rufescente tincto, ventre imo et crisso coccineis; rostro superiore fusco-nigro, basi et mandibulâ inferiore flavis (Salvin).

Male.—Shining green above, slightly washed with blue, but also inclining to golden green; the head decidedly darker and much more blue; least wing-coverts coloured like the back, the remainder grey very finely waved with tiny zig-zag lines of black; the bastard wing and primary coverts black; quills black, the primaries with an indistinct narrow edging of whity brown to the outer web; the secondaries externally vermiculated with grey like the wing-coverts; the three centre tail-feathers on each side shining green, tipped with black; the two centre rectrices entirely green, but the next two more or less inclining to black on the inner web; the four outermost on each side black, narrowly lined across with whitish, these cross lines disappearing towards the centre of the tail; lores, sides of face, and ear-coverts, as well as the chin and throat, black; fore neck and chest shining green like the back; rest of under-surface crimson; inner lining of quills ashy black, with greyish cross vermiculations on the under wing-coverts.

Total length about $11\frac{1}{2}$ inches; wing $6\frac{1}{4}$; tail $6\frac{1}{2}$; culmen $\frac{3}{4}$.

The female, according to Mr. Salvin (*l. c.*) is “dark grey; the wings and tail being blacker; the three outer tail-feathers narrowly barred across with white; the abdomen tinged with rufous, the lower part of the belly and vent crimson; bill dusky black, the base and the lower mandible yellow.”

Trogon clathratus. Salvin, P. Z. S. 1866, p. 75.—Id. P. Z. S. 1867, p. 151.—Id. Ibis, 1869, p. 316.—Id. P. Z. S. 1870, p. 202.—Lawr. Ann. Lyc. N. Y. ix. p. 119.—Sel. & Salv. Nomencl. Av. Neotr.
—— *calthratus.* Gray, Hand-l. B. i. p. 81.

THIS species was first described by Mr. Osbert Salvin in 1866; and his remarks as to its affinities are as follows:—“At first sight this very distinct species has the appearance of *T. massena* of Gould; but, in addition to a very considerable inferiority of size, the barred tail (a characteristic of a very different section of the Trogonidæ, viz. of that which includes *T. puella*, Gould) at once shows its complete distinctness. It partakes, in fact, to some extent of the characters of both the above-mentioned groups. There are five distinct notches on the edges of both upper and lower mandibles; but these are neither so deep nor so large as in *T. massena*.”

It is an inhabitant of Veragua, the exact localities where it has been obtained by Arcé being Santa Fé, Santiago de Veragua, Calovevora, and the Cordillera de Tolé; but more recently it has been shown to extend to Costa Rica, by Mr. Lawrence.

“This exceedingly well-marked species of Trogon,” Mr. Salvin says, “seems to occupy a position somewhat intermediate between the two sections represented by *T. massena* and *T. puella*, its real affinity being with the former group. The credit of its discovery is due to Enrique Arcé, who was employed as a collector by Mr. Godman and myself for many years in Central America.

“In a collection formed in the neighbourhood of Santiago and Santa Fé in Veragua and forwarded to us in 1865, were two males of this species, which I described in the Zoological Society’s Proceedings for 1866. Subsequently we received others, including females, from the Cordillera de Tolé, Calovevora; and since then the species has been discovered in Costa Rica, specimens having been sent by Carmiol to us, and to the Smithsonian Institution from San Mateo by J. Cooper.

“The range of the species seems strictly limited to the forests of the mountain-ranges of Costa Rica and Veragua, not passing the river San Juan to the northward, or the lowlands of the isthmus of Panama to the southward. No account of its habits has as yet reached us.”

The front figures in the accompanying Plate are of life-size.

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TROGON CHIONURUS, *Solater & Salvin.*

TROGON CHIONURUS.

The Snow-tailed Trogon.

SPECIFIC CHARACTER.

Trog. similis T. viridi, sed rectricibus externis fere omnino albis, ita ut cauda clausa omnino alba esse videtur.

Fœm. Etiam rectricum externarum apices latè albos ostendit (Scl. & Salv. l. c.).

Adult male.—Head and neck black, with a very slight gloss of purple; back purplish blue, glossed here and there with coppery green, shading off into rich dark purple on the rump and upper tail-coverts; wings entirely black, with the exception of the least coverts, which are coloured like the back; tail dull purple, tipped with black, and inclining to black on the inner web of all but the two centre feathers, the three outer tail-feathers white, with black bases, the latter increasing in extent gradually towards the centre of the tail; sides of face, throat, and upper breast black, the sides of the latter showing a purplish gloss, rest of under surface rich orange-yellow, the leg-feathers black; under wing-coverts black, the innermost whitish, the lower series ashy black, like the inner lining of the quills, the latter being ashy black with white bases to the inner webs of the median primaries.

Total length $10\frac{1}{2}$ inches; culmen $\frac{3}{4}$; wing $5\frac{1}{4}$; tail 6; tarsus $\frac{1}{2}$.

Female.—Greyish above and on the lower parts, including the breast; the rest of the under surface rich orange; wings black, the coverts narrowly barred with white; the outer tail-feathers tipped with white and barred with black on the rest of the white of these feathers.

Trogon viridis, Scl. & Salv. P. Z. S. 1864, p. 364.—Lawr. Ann. Lyc. N. Y. vii. p. 290.

—— *chionurus*, Scl. & Salv. P. Z. S. 1870, p. 843.—Wyatt, Ibis, 1871, p. 374.—Scl. & Salv. Nomencl. Av. Neotr. p. 304.

—— *eximius*, Lawr. Ann. Lyc. N. Y. x. p. 11.

I HAVE taken the characters of this species from Messrs. Selater and Salvin; and I think I cannot do better than reproduce their remarks on the affinities of the species:—"We have examined numerous specimens of this Trogon from Panama, and have hitherto referred it to *T. viridis*. We convinced ourselves some time ago, on examining an example from Mr. Lawrence's collection, that it was not really *T. viridis*, but were then doubtful whether it might not be *T. venustus*, Cab. & Hein. (Mus. Hein. iv. p. 194). On going into the question again, aided by additional skins of *T. viridis* from various localities, we feel convinced that *T. venustus* (as characterized l. s. c.) cannot be considered really distinct from *T. viridis*. We have specimens of this bird now before us from Rio, Bahia, Matto Grosso, Eastern Venezuela, and Bogota, and can find no constant differences amongst them, although there is considerable diversity of tint in the colour of the lower back, and some specimens approach to what Dr. Finsch has recently proposed to call *T. cyanurus* (P. Z. S. 1870, p. 559)!

"On the other hand, three Panama skins in the collection of Salvin and Godman present the remarkable character of the outer tail-feathers above mentioned. The first outer pair are all pure white except a narrow basal patch concealed by the tail-coverts. Of the second pair considerably more than the apical half is white. In the third pair the white apices measure 2 inches in length. We therefore call this bird *T. chionurus*. We have seen other examples of this Panama species in Mr. Lawrence's and Mr. Gould's collections."

Nothing is known of the habits and economy of this fine species; but Mr. Salvin, in a note to me, states:—

“This beautiful species may readily be distinguished from the well-known *T. viridis* by the much greater development of white in the tail-feathers. The first outer pair are all pure white, except a narrow basal patch concealed by the tail-coverts. Of the second pair considerably more than the apical half is white; in the third pair the white apices measure 2 inches in length. When the tail is closed the under surface appears perfectly white. Comparing the amount of white in the tail with that shown in *T. viridis* the distinctness of the two birds is apparent.

“Notwithstanding this difference, the species remained for several years undescribed both in Mr. Lawrence’s cabinet and our own; but in 1870 Mr. Sclater and I had occasion to reexamine the question, when it became manifest that this fine species required a name. About the same time Mr. Lawrence also bestowed the name *eximius* upon it.

“The first specimens of this species were forwarded to Mr. Lawrence from the Panamá-Railway line, by the late Mr. James McLeannan, who afterwards supplied Mr. Godman’s and my collection with skins of both sexes. The bird does not seem to extend its range into Central America beyond the railway (though it is there not uncommon), as our collector Arcé did not meet with it in the district of Veragua, which he has so carefully investigated. Further to the southward we know very little of its range, as it does not come within the grasp of the bird-collectors of Bogotá. Mr. Wyatt, however, when travelling in the valley of the river Magdalena, shot a female Trogon which Mr. Sclater and I determined to be of this species. He met with it in the forest near Paturia, and says that he heard the male calling further in, and he noted that the iris was dark brown (Ibis, 1871, p. 374). From this it would appear that the home of *Trogon chionurus* is the low-lying hot forests of the great valley of the Magdalena, and that it extends its range into the Central-American isthmus as far as the foot of the mountains which form the higher ranges of Veragua and Costa Rica.”

The Plate represents a male and a female, of the natural size.

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TROGON BAIRDI, *Lawrence.*

TROGON BAIRDI.

Baird's Trogon.

SPECIFIC CHARACTER.

Trog. purpurascenti-cyanescens, vix aurato-viridi nitens; pileo et collo postico purpurascentibus; facie laterali et gula nigris; pectore antico nigro purpurascenti-nitente; corpore reliquo subtus scarlatino; alis omnino nigris, tectricibus alarum tantum minoribus dorso concoloribus; caudâ cyanescenti-viridi, nigro terminatâ, rectricibus intermediis intus nigricantibus, exterioribus tribus basaliter nigris, versùs apicem gradatim albis.

Fœm. Schistaceo-nigra, alis caudâque paullò obscurioribus et extus, nisi in rectricibus quatuor mediis, albo transfasciatis; ventre et crisso coccineis (Salvin).

Adult male.—Above bluish green, with a beautiful shade of purple, especially on the rump, which is somewhat tinged with bronze also; head and hind neck purple; wings entirely black, excepting the least wing-coverts, which are shining green like the back; the three centre tail-feathers on each side bluish green, tipped with black, the two middle rectrices entirely green, but the next two blackish on the inner web, the three outer tail-feathers black, inclining to white at the tips, this colour gradually increasing on the outer feathers; lores, ear-coverts, sides of face, and throat black; the fore neck black, with a few metallic purple feathers; rest of under surface of body bright scarlet; the inner lining of the wing greyish black, the interior wing-coverts and the base of the inner web of the quills whitish.

Total length 11 inches; culmen 1.0; wing $5\frac{3}{4}$; tail $6\frac{1}{2}$.

Female.—Slaty black; the wings and tail rather darker, and, excepting on the four centre feathers, barred across with white; belly and vent crimson.

Trogon bairdi. Lawrence, Ann. Lyc. N. Y. ix. p. 119.—Salv. Ibis, 1869, p. 316.—Id. P. Z. S. 1870, p. 202.—Scl. & Salv. Nomencl. Av. Neotr. p. 104.

I must congratulate Mr. Lawrence, not only on the good fortune which has placed in his hands such a beautiful species as the present, but also for the happy selection of his specific title, whereby is perpetuated the name of a scientific man who deserves well of his country.

I regret that we know nothing of the habits of this splendid Trogon; but there is doubtless no difference in this respect from other members of the group. At present it has only been found in Costa Rica and Veragua.

“The *Trogon bairdi*,” writes Mr. Salvin, “is one of the remarkable additions which have been made to the birds of Central America during the last few years. Up to the year 1861–62 few districts in America were less known ornithologically than Costa Rica; but since that time so numerous are the collections that have been made that our knowledge of the riches of that country may now be said to approach completion. In the year 1868 Mr. Lawrence compiled a list of the birds of Costa Rica, based chiefly upon the specimens sent to the Smithsonian Institution by various collectors. Amongst the skins were two male specimens of this fine bird, which Mr. Lawrence named in honour of Prof. Spencer F. Baird, the well-known ornithologist, who has so many years held the important post of Assistant Secretary to the Smithsonian Institution.”

Mr. Lawrence, in his remarks on this species, states that its nearest ally is *T. melanocephalus*; but on this point I venture to differ from him, as the bird now under consideration belongs to a somewhat different group of the genus, and in fact only differs from *T. chionurus* of the Isthmus of Panamá in

having the breast red instead of yellow. This difference, however, is very apparent, as may readily be seen by reference to the drawings of the two species.

As already stated, this species is found in Costa Rica, the original specimens having been obtained at a place called San Mateo. Since that time numerous examples have been forwarded to us by our collector Enrique Arcé, who obtained them at San Miguel de Bugaba on the slopes of the Volcano of Chiriqui; and, more recently still, he has procured others in the forests nearer to Panamá. On the railway-line itself, however, it has not yet been met with, its place being apparently taken by the orange-breasted *T. chionurus*.

Nothing has as yet transpired as to its habits and economy.

The figures are life-size.

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TROGON PERSONATUS, *Gould.*

TROGON PERSONATUS, Gould.

Black-faced Trogon.

SPECIFIC CHARACTER.

Trog. vertice, corpore superiore et pectore splendide aureo-viridibus; loris, plumis auricularibus, et gutture nigris; rectricibus caudæ duabus intermediis ex aureo virescenti-fuscis, ad apicem nigris; utrinque proximâ pogonio interno et apice nigris, pogonio externo ex aureo virescenti-fusco; rectricibus externis nigris, lineis albis crebris et undulatis minutè fasciatis, ad apicem latè niveis; alis nigris, tectricibus et secundariis lineis cinereis minutis et irregularibus crebrè fasciatis; abdomine et corpore subtus coccineis; colore coccineo à viridi disjuncto lunulâ albâ; rostro aurantiaco.

Fœm. Capite, pectore et corpore superiore fuscis; rectricibus caudæ duabus intermediis sordide castaneis; gutture et plumis auricularibus nigris; abdomine et corpore subtus coccineis, hoc colore à fusco pectorali disjuncto lunulâ albâ.

Male.—Crown of the head, all the upper surface, and chest rich golden green; lores, ear-coverts, and throat black; two middle tail-feathers golden greenish brown and tipped with black, the next on each side have the inner web and tip black and the outer web golden greenish brown; the outer feathers black, crossed by numerous fine irregular bars, and largely tipped with pure white; wings black, the coverts and secondaries finely pencilled with irregular zigzag markings of light grey; primaries margined externally with light grey; abdomen and under surface scarlet, separated from the green of the chest by a narrow crescent of white; bill orange-yellow; feet yellowish brown.

Female.—Head, chest, and upper surface brown; two middle tail-feathers dull chestnut-brown, tipped with black; the two next on each side black on their inner webs and at the tip, and dull chestnut-brown on their outer webs; the remaining feathers black on their inner webs at the base, largely tipped with white, the intermediate portion being crossed by alternate irregular bars of black and white; wings as in the male, the coverts and secondaries freckled with yellowish brown instead of grey, and ear-coverts black; abdomen and under surface scarlet, which colour is separated from the brown of the chest by a crescent of white; bill and feet yellowish brown.

Total length 11 inches; bill $\frac{7}{8}$; wing $5\frac{1}{4}$; tail $6\frac{1}{2}$; tarsi $\frac{5}{8}$.

Trogon personatus. Gould, Ann. & Mag. N. H. ix. p. 237 (1842).

—— *heliothrix.* Tsch. Wieg. Arch. 1844, p. 300, et Fauna Peruana, pp. 41, 257.

Trogonurus personatus. Bp. Consp. Vol. Zyg. p. 14.

Trogon propinquus. Cab. & Hein. Mus. Hein. iv. p. 175.

? ——— *assimilis.* Gould, P. Z. S. 1846, p. 67.

ORNITHOLOGISTS are at the present moment divided in opinion as to whether the very common Trogons which inhabit the hill-country of Columbia, Ecuador, and Peru are referable to one, two, three, or more species, or whether these birds, having minor differences in markings and structure, should be considered mere local varieties of a widely spread bird; at all events it has been considered, by some of my colleagues, unnecessary to figure more than that first described.

The bird to which I originally gave the name of *personatus* is the one chosen for illustration in the accompanying Plate.

On this subject Mr. Salvin has been good enough to send me the following note :—

“This Trogon is sent in some numbers from the United States of Columbia in the collections made in the vicinity of Bogotá, and is thus, so far as the Trogons from this country are concerned, one of the best known of the whole group. Passing southwards it would appear to be almost equally common in the adjoining country of Ecuador, where, however, the distinct title of *T. propinquus* has recently been bestowed upon it by Messrs. Cabanis and Heine. As their characters were drawn from a single immature male specimen, they are not entitled to much consideration, especially as birds from Ecuador do not seem to be really distinguishable by any characters worthy of the name from Bogotá examples. That Tschudi's *Trogon heliothrix* also belongs to the same species I have no doubt; for, on a further examination of specimens sent from Peru by Mr. Whitely and called by us *T. heliothrix* (P. Z. S. 1869, p. 598), I am unable to detect any real difference between them and typical Bogotá birds.

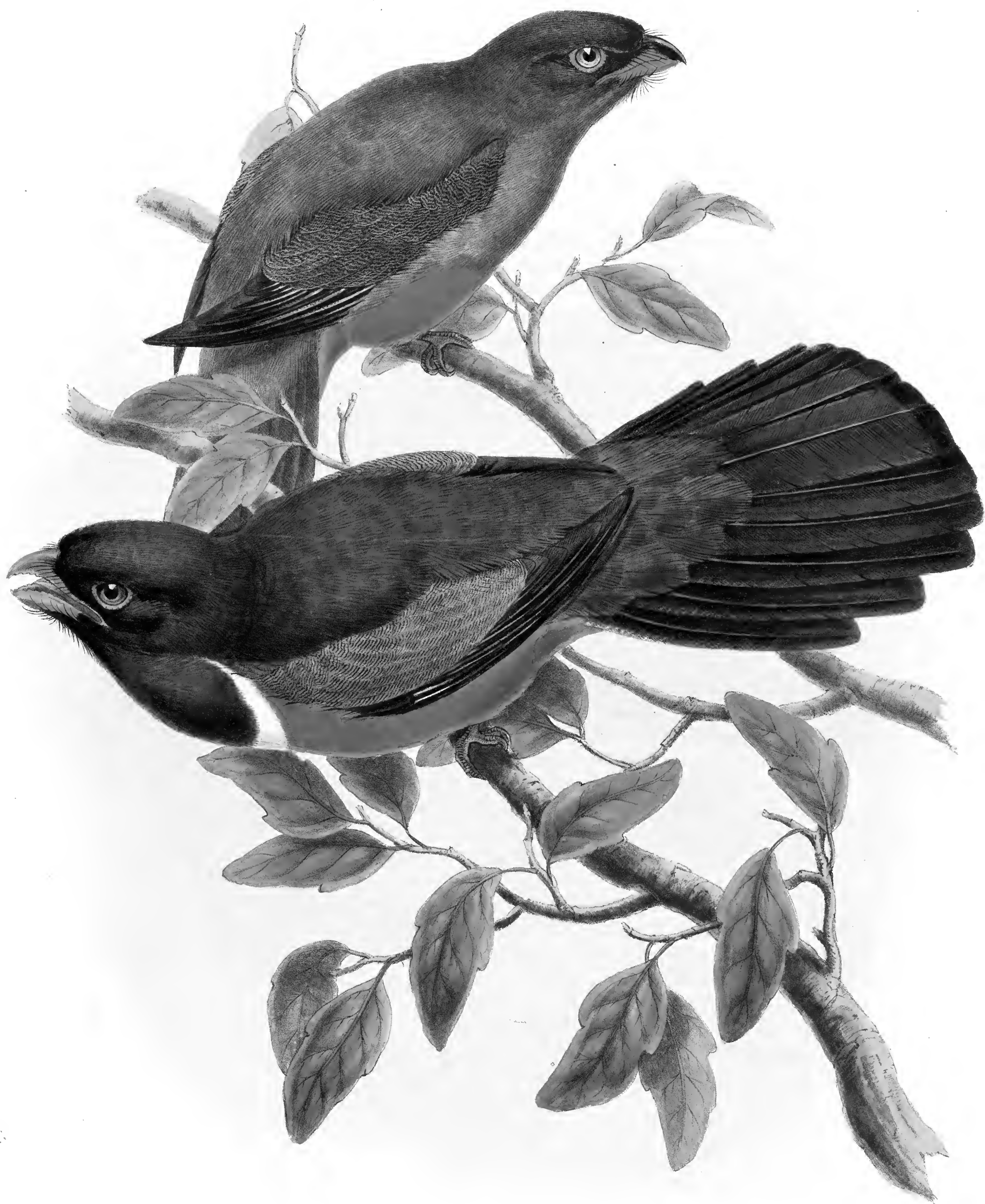
“The most northern points in the range of this Trogon are Merida, where specimens were obtained by M. Anton Goering, and the mountain-ranges which lie to the eastward of the valley of the Magdalena, where Mr. Claude Wyatt met with it in his journey through that country. The latter traveller gives (Ibis, 1871, p. 375) the following interesting account of this species. He says :—‘After leaving Canuto our road lay over a mountain where these birds must be tolerably common. We saw three that day in the oak-forest near the highest point of our road, at an elevation of about 8500 feet, and one in the denser forest lower down. We afterwards met with them occasionally in other parts of the forest until near Cachiri. The skin of these birds is exceedingly delicate; and the feathers come out in handfuls when they are shot, should they fall even a short distance before reaching the ground. . . . They are very tame, and generally sit motionless up in the trees (where the cock bird, should his back be turned to you, is very difficult to see), and allow one to ride by within a few yards. I have, however, seen them hawking for insects, and returning to the same perch, like a Flycatcher. From the gullet of one of those we shot we took a lizard. Their range seems to extend from an elevation of about 7000 to 8500 feet. Iris dark brown.’

“In Ecuador Fraser obtained *Trogon personatus* at several places. On specimens shot at Matos he says (P. Z. S. 1858, p. 555) :—‘*Pilco*’ (native name). ‘Irides dark hazel; rim round the eyes red or very deep orange; bill, feet, and legs yellow. High up in the mountain, on the tops of the trees. Stomachs contained fruit, vegetable matter, and insects.’ He found it also at Pallatanga and above Puellaro. Tschudi found it in Peru, where Mr. Whitely obtained specimens in the valley of the Cosnipata.

“It will thus be seen that this species is strictly confined in its range to the slopes of the Andes, and probably is seldom found in forests having a lower elevation than 6000 feet.”

The Plate represents two males and a female, of the size of life.

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TROGON MELANURUS, Sw.

TROGON MELANURUS, Swainson.

Black-tailed Trogon.

SPECIFIC CHARACTER.

Trog. vertice, pectore summo et corpore suprâ intensè aureo-viridibus; loris, regione auriculari, gulâque nigris, hâc aureo-viridi nitente; pectore albo transversim fasciato; corpore subtus pulcherrimè coccineo; alis nigris, medialiter lineis delicatis albis striatis primariisque extus albo marginatis; caudâ nigrâ, rectricibus sex intermediis purpureo et viridi tinctis; duabus externis extus lineis obscuris albis striatis; rostro flavo; pedibus stramineis.

Fœm. Capite, corpore suprâ, gutture pectoreque intensè cinereis; alis nigris, obscurè striis albis medialiter notatis; caudâ nigrâ, rectricibus duabus externis extus crissoque coccineis.

Male.—Crown of the head, chest, and all the upper surface dark golden green; space between the bill and the eye, ear-coverts, and throat black, gradually passing into the golden green; breast crossed by a band of white, beyond which all the under surface is rich fiery scarlet; wing black, the centre striated with fine wavy lines of white, and the primaries margined externally with the same colour; tail black, the six centre feathers tinged with purple and green, and the outer web of the lateral feather on each side faintly striated with white, as in the centre of the wing; bill yellow; feet straw-yellow.

Female.—Head, all the upper surface, throat, and breast dark grey; wings and tail black, with a faint indication of the white striæ on the centre of the wing and the outer webs of the lateral tail-feathers; vent and under tail-coverts scarlet.

Total length 12 inches; bill $1\frac{1}{8}$; wing $6\frac{1}{4}$; tail $6\frac{1}{4}$; tarsi $\frac{1}{2}$.

Couroucou à ventre rouge de Cayenne. Buff. Pl. Enl. 452.

Trogon curucui, var. Gm. S. N. i. p. 403.

Le Couroucou d'Amérique mâle à ventre rose. Levaill. Hist. Nat. Courouc. pl. i.

Le Couroucou à ventre rose dans son premier âge. Levaill. t. c. pl. 2.

Trogon curucui (nec Linn.). Bonn. et Vieill. Enc. Méth. iii. p. 1362.—Gray, Gen. B. i. p. 69.—Burm. Syst. Uebers. ii. p. 275.—Gray, Hand-l. B. i. p. 81.

Trogon strigilatus. Spix, Av. Bras. i. p. 49.

—— *melanurus.* Swains. An. in Menag. p. 329.—Gould, Monogr. Trogon. text to pl. 18.

——Gray, List Fissir. Brit. Mus. p. 41.—Cab. in Schomb. Reis. Brit. Guian. iii.

p. 718.—Scl. P. Z. S. 1857, p. 261, et 1860, p. 284.—Id. Cat. Am. B. p. 277.—Scl.

& Salv. P. Z. S. 1866, p. 193.—Id. *op. cit.* 1867, pp. 583, 978.—Id. *op. cit.* 1869,

p. 598.—Pelz. Orn. Bras. pp. 19, 402.—Scl. & Salv. P. Z. S. 1873, p. 292.—Id.

Nomencl. Av. Neotr. p. 104.

Trogon nigricaudatus. Gould, Monogr. Trogon. pl. 18.

Curucujus melanurus. Bp. Consp. Vol. Zyg. p. 14.

Troctes melanurus. Cab. & Heine, Mus. Hein. Th. iv. p. 202.

—— *mesurus.* Cab. & Heine, Mus. Hein. iv. p. 203?

IN the first edition of this Monograph I stated my opinion that Swainson's name of *melanurus* was the best one that could be employed for the present species, as being undoubtedly applicable, and at the same time the oldest recognizable title for it. Although Mr. George Robert Gray believed it to be the true *Trogon curucui* of Linnæus, his opinion has not been concurred in by the majority of ornithologists, neither can I adopt it.

The Black-tailed Trogon is a bird of very wide distribution in South America. It is found in Guiana, and the Museum Heineanum is said to contain an example from Venezuela. Messrs. Cabanis and Heine, in their account of the last-named Museum, separate the Trogon from Ecuador as a distinct species; but I have not found sufficient characters for this specific separation, and I therefore keep it under the heading of *T. melanurus*. Mr. Fraser met with the species at Babahoyo, in the latter country; while in the Amazons it has been procured by Mr. Bates at Ega and on the Rio Javarri, by Mr. Hauxwell at Pebas, and by Mr. Edward Bartlett in Eastern Peru, at Nauta, on the Upper Ucayali, as well as at Yurimaguas, Xeberos, and Santa Cruz, while Mr. Henry Whitely has shot it in the valley of the Cosnipata in Peru.

The British Museum possesses a specimen from Para, procured by Mr. R. Graham, and Mr. Wallace met with it in the same locality. In his excellent work on Natterer's Ornithological Travels in Brazil, Herr von Pelzel enumerates several places where that model collector obtained specimens. Like the naturalists above mentioned, Natterer found it at Para, and higher up the country on the Rio Negro, at Barra, and Maribitanas; he also procured it in Central Brazil, in the province of Matto Grosso, at Villa Maria, and on the Rio do Sipotuba.

As is the case with nearly all the Trogons, the details as to the habits of the present bird are very scanty. Mr. Fraser alone gives a short note on the species procured by him at Babahoyo, as follows:—"Native name *Chocota*. Irides white; upper mandible with a large yellow spot at the base, lower mandible yellow; legs and feet greenish, soles yellow. Much more active than any other Trogon which I have yet had an opportunity of observing, hopping from branch to branch in the lower part of a large tree in the deep bush, solitary and silent."

On this species Mr. Salvin writes to me:—

"Many authors consider that this bird should bear Linnæus's name *Trogon curucui*; but it is evident, from the references added to the diagnosis given in the 'Systema Naturæ,' that more than one species was confused under the name *curucui*. Moreover Dr. Cabanis, whose authority on such subjects is entitled to the highest respect, considers that the name *curucui* belongs not to the present bird but to *T. collaris*, a view, again, disputed by Dr. Finsch. Under these conflicting opinions I believe that the interests of science are best served by considering Linnæus's name to be incapable of accurate determination, and by selecting the first subsequently proposed name, about which no reasonable doubts can be entertained. The name *melanurus*, bestowed by Swainson, thus becomes a proper title for this Trogon; and as one of Swainson's types is still preserved in the Museum of the University of Cambridge, this name may be used with the greatest confidence. The specimen is a female and bears on its label "*Trogon nigricauda*, Sw. Black-tailed T. Cayenne,"—from which it would appear that although Swainson first thought of using for this bird the Latin rendering of "black-tailed," he adopted the Greek translation when describing it. Under the former it appears in the first edition of the Trogonidæ.

"The bird from Western Ecuador has been separated by Messrs. Cabanis and Heine as *Troctes mesurus*, the differences being stated to consist in its slightly larger size and slight modifications in the coloration of the lower back and the tail-feathers and in the mottling of the wing-coverts. As these differences are traced from the comparison of only four specimens of the two species, it may well turn out that they are not sufficiently pronounced to lead to the conclusion that two really distinct birds of this form exist."

The figures in the accompanying Plate are of the size of life.

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HARPACTES DIARDI.

HARPACTES DIARDI.

Diard's Trogon.

SPECIFIC CHARACTER.

Trog. capite sanguineo; fasciâ nuchali rosacâ; dorso arenaceo-brunneo; alis albo nigroque minutè fasciatis, remigibus nigris; gutture pectoreque nigris; ventre miniaceo; rectricibus intermediis duabus brunneis nigro apiculatis, duabus proximis utrinque nigris, reliquis ad basin nigris apicem versus nigro alboque marmoratis.

Fœm. Fasciâ nuchali nullâ; capite fusco-brunneo; alis brunneo nigroque fasciatis; pectore brunneo; ventre quam in mare pallidiore.

Rostrum nigrescens; orbitæ nudæ coccineæ; pedes flavescenti-brunnei.

Male.—Crown of the head deep blood-red; throat and chest black; a nuchal band of rose-pink separates the rich colouring of the head from the back, which, with the upper tail-coverts, is dark sandy brown; wings minutely barred with black and white; quills black; breast and under surface of body carmine; thighs black; two middle tail-feathers rich brown, tipped with black, the two next on each side black, the rest black at their base, and marbled for the remainder of their length with black and white; bill blackish; bare space round the eye purplish red; feet yellowish brown.

Female.—Destitute of the nuchal band and having the top of the head dusky brown; the back and tail as in the male, the outer feathers being less thickly dotted with black; chest brown; wings barred with brown and black; quills black; abdomen pale carmine.

Total length $12\frac{1}{4}$ inches; bill $1\frac{3}{4}$; wing $5\frac{3}{4}$; tail $6\frac{1}{2}$; tarsi $\frac{3}{4}$.

Trogon diardii. Temm. Pl. Col. 54.—Gould, Monogr. Trogon. 1st ed. pl. 30.

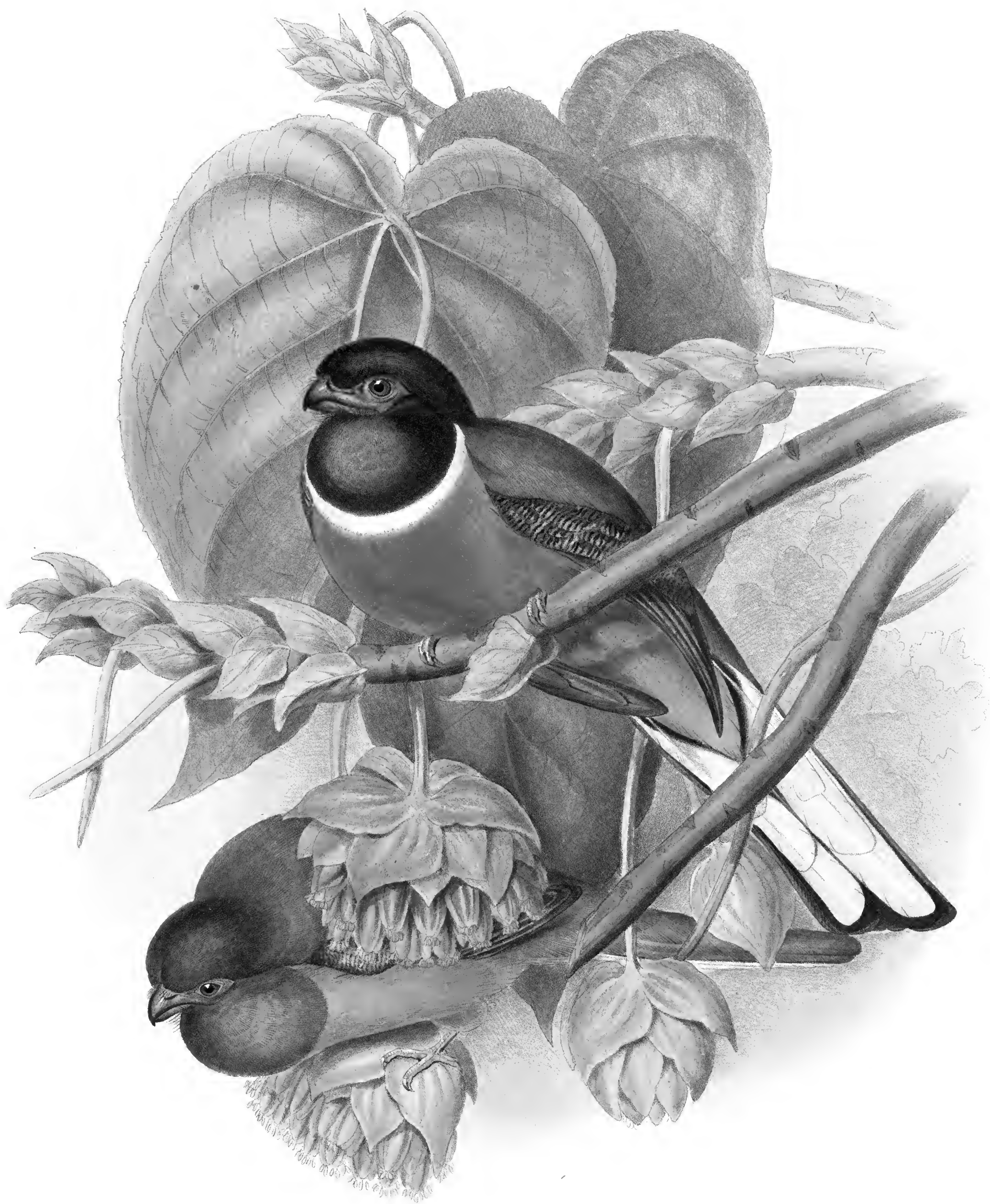
Harpactes diardi. Swains. Classif. B. ii. p. 337.—Gray, Gen. B. i. p. 71.—Blyth, Cat. B. Mus. A. S. B. p. 80.—Bp. Consp. i. p. 151.—Horsf. & Moore, Cat. B. Mus. E. I. Co. ii. p. 716.—Gould, B. Asia, part xvii.

Pyrotrogon diardi. Cab. & Heine, Mus. Hein. Th. iv. p. 156.—Salvad. Cat. Ucc. Born. p. 28.

Of this beautiful Trogon I have seen a large number of specimens in the course of my life, and after a very careful comparison I have not been able to separate examples from Malacca from others of Bornean origin. At one time I was inclined to believe in two species; but I have now seen so many specimens from Borneo indistinguishable from Malaccan birds, that I have abandoned this idea. In Borneo the bird seems to be abundant and has been obtained in several localities, viz. at Pontianak by Diard, at Bejadjoe by Solomon Müller, and at Sarawak by Doria and Beccari as well as by Mr. Hugh Low, who has more recently procured it in Labuan. In Malaccan collections it often occurs.

I have already given, in my 'Birds of Asia,' all the details as yet published concerning the species, a correct idea of which can be gathered from the accompanying Plate, which has already appeared in the last-mentioned work. It may be distinguished from the other Asiatic Trogons by the freckled markings of the outer tail-feathers, in which respect it assimilates to some of the American members of the family.

The two sexes are figured in the accompanying Plate, where they are depicted of the natural size. The plant is the *Hoya coriacea*.



HARPACTES FASCIATUS.

J. Gould & E. C. Richter, del. et lith.

Hallman & Walton Imp.

HARPACTES FASCIATUS.

Fasciated Trogon.

SPECIFIC CHARACTER.

Trog. capite, gutture pectoreque fuliginoso-nigris, hœc torque lato albo; ventre coccineo; dorso et supracaudalibus sordidè arenaceo-brunneis; scapularibus et tectricibus alarum majoribus nigris albo flexuose fasciatis; remigibus nigris, pogoniis externis albo fimbriatis; rectricibus duabus intermediis subcastaneis nigro apiculatis, proximis duabus utrinque nigris prope rhachin brunneis, reliquis ad basin nigris, ad apicem albis.

Fœm. Capite, dorso, gutture pectoreque sordidè brunneis; ventre luteo; pectore haud torquato; scapularibus nigro brunneoque fasciatis.

Rostrum nigrum, mandibularum basi et regione ophthalmicâ nudâ cæruleis.

Male.—Head, neck, and breast sooty black, bounded below by a narrow crescent of white separating the sooty black of the breast from the rich carmine-red of the rest of the under surface; upper wing-coverts orange-brown, becoming paler and brighter on the rump and upper tail-coverts; wings black, the coverts and secondaries crossed with numerous fine irregular bars of white, and the primaries narrowly edged with the same hue externally; the two centre tail-feathers chestnut, narrowly tipped with black, the next on each side chestnut at the base and black at the tip, the chestnut advancing in a bifurcated form towards the tip of the outer web; the next on each side entirely black, the three lateral feathers on each side black at the base, largely tipped with white, the white advancing on the margin of the outer web nearly to the base, and the black along the shaft to the tip; irides deep brown; bill and orbits fine deep cobalt-blue; legs light blue.

Female.—Differs from the male in having the head and neck brown, with a yellowish tinge on the chest; the under surface rich ochraceous, and the bars on wings ochraceous brown instead of white.

Total length about 12 inches; wing 5.

Trogon fasciatus. Gm. S. N. i. p. 405: Penn. Ind. Zool. p. 35, pl. iv.

—— *malabaricus.* Gould, P. Z. S. 1834, p. 26.—Id. Monogr. Trogon. pl. 31.—Gray, Gen. B. i. p. 71.

Harpactes malabaricus. Sw. Classif. B. ii. p. 337.—Gray, Cat. Fissir. Brit. Mus. p. 44.

—— *fasciatus.* Blyth, Cat. B. Mus. A. S. B. p. 80.—Horsf. & Moore, Cat. B. Mus. E. I. Co. ii. p. 714.—Gould, Birds of Asia, pt. vi.—Jerdon, B. Ind. i. p. 201.—Holdsw. P. Z. S. 1872, p. 422.

Pyrotrogon fasciatus. Cab. & Heine, Mus. Hein. ii. p. 156.

Kufni Churi, of some Hindoos.

Kurna, of the Mahrattas.

Kakerni Hukhi, of the Canarese.

Rantvam Kondea, of the Cingalese (Kelaart).

THE Malabar Trogon is found in Southern India and Ceylon, where it represents the Malayan *Harpactes kasumba*. The male differs from that of the last-named species in its smaller size and sooty-black head and neck; while the female of *H. fasciatus* wants the breast-band, which is conspicuous in the hen of *H. kasumba*.

The late Dr. Jerdon has given the following account of the species in his 'Birds of India:—“The Malabar Trogon is found in the forests of Malabar from the extreme south to about 17° N. lat., reaching up the Ghâts and hill-ranges to at least 3000 feet. It is also found in some of the forests of Central India and in Ceylon.

“It prefers the more elevated situations, at about 2000 feet or so, and keeps generally to the thickest parts of the woods. It is often to be seen seated motionless on a branch of a tree, occasionally flying off to capture an insect on the wing, sometimes returning to the same perch, but oftener taking up a fresh position, and in this way wandering about a good deal. It is unusually solitary, sometimes in pairs; and I have seen four or five together. Its food consists of various insects, chiefly coleopterous. Layard says that it is found in small parties of three or four, and feeds on Spiders, Mantidæ, and Coleoptera. I am not aware of having heard its note, and certainly have generally found it a silent bird. Tickell, however, says that it has a wild querulous note like the mewling of a cat. Its Hindustani name is given from its sitting with the head sunk in the shoulders, as if it had no neck, or as if dressed up in a faquir's *kufni*.”

“In Ceylon,” writes Mr. Holdsworth, “it is only found among wild tree-jungles in the southern half of the island. I have seen it about twelve miles from Colombo, in a wild uncultivated district in the low country, and also at Nuwara Eliya, in February; but it is not very commonly met with, and is perhaps somewhat local in its distribution. In its manners it resembles the Flycatchers, and has generally a peculiar fluttering mode of flight.”

The sexes are represented in the Plate of the natural size.

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HAPALODERMA NARINA.

HAPALODERMA NARINA.

Narina Trogon.

SPECIFIC CHARACTER.

Trog. splendenti-viridis, ventre sanguineo ; alis brunneis, secundariis et tectricibus alarum majoribus cinereo-albido pulverulentis, harum pogoniis externis metallicè viridi tinctis ; rectricibus duabus intermediis saturatè purpurascenti-viridibus, duabus proximis utrinque olivascenti-viridibus, reliquis saturatè viridibus ad apices latè albis.

Rostrum flavum cæruleo tinctum ; pedes pallidè brunnescenti-flavi.

Fœm. Mari similis, sed orbitis, gutture pectoreque rufo-brunneis, hóc dilutiore roseoque parùm tincto, ventre et subcaudalibus saturatè roseis distinguenda.

Male.—Bill yellow, with a tinge of blue ; whole of the head, throat, chest, shoulders, back, and upper tail-coverts resplendent green ; breast and under surface bright blood-red ; the wings brown, the greater coverts and secondaries powdered with greyish white, the outer edge of each feather having a tinge of metallic green ; two centre feathers of the tail dark purplish green, the two next on each side olive-green, the three outer on each side dark green at their base, largely tipped with white ; feet light brownish yellow.

Female.—The upper surface and tail closely resemble those of the male ; round the eye and throat rufous brown, becoming paler on the chest, which is slightly tinted with rosy pink ; lower part of the abdomen and under tail-coverts deep rose-red.

Total length $11\frac{1}{4}$ inches ; bill $1\frac{1}{8}$; wing $5\frac{1}{4}$; tail $6\frac{1}{2}$; tarsi $\frac{3}{4}$.

Le Couroucou narina. Levaill. Ois. d'Afr. v. p. 73, pls. 228, 229.

Trogon narina. Vieill. N. Dict. d'Hist. Nat. viii. p. 318.—Gould, Monogr. Trogon. 1st ed. pl. 26.—Finsch & Hartl. Vög. Ost-Afr. p. 155.—Finsch, Tr. Z. S. vii. p. 219.

Apaloderma narina. Swains. Classif. B. ii. p. 337.—Bp. Consp. i. p. 150.—Layard, B. S. Afr. p. 61.

Hapaloderma narina. Cab. & Heine, Mus. Hein. Th. iv. p. 165.—Heugl. Orn. N.O.-Afr. p. 176.

It is a remarkable fact that while the Neotropical and Indian regions abound with species of Trogons, Africa shows but one well-marked type ; for although the two species inhabiting the latter continent are easily distinguishable the one from the other, they both belong to one form, which has been considered to belong to a distinct genus, *Hapaloderma* of Swainson. The Narina Trogon is found in Southern and North-eastern Africa, having been discovered in the former part of the continent by the well-known traveller Levaillant. Mr. Layard gives the following account of it :—"It is found throughout forests and wooded kloofs in all the eastern portions of the colony. About the Knysna it is scarce, but, wherever found, exhibits the same shy creeping habits. When apprehensive of discovery, it sits motionless on its branch until alarmed at some act of the fowler, when it precipitates itself headlong into the bush, and is instantly lost to view. It feeds on fruit and insects, and utters a loud moaning note or, perhaps, more correctly speaking, a hoot. Levaillant states that they nest in holes of trees, and lay four, nearly round, white eggs ; but this requires confirmation. I have never met with any one who had seen their nests, though I made particular inquiries about them at the Knysna."

It is found in Natal, and is also met with in the Zambesi district, though here, says Dr. Kirk, "It is a decidedly scarce bird. I know of only four specimens having been seen—one in the Zambesi delta, the others at Chibisa, on the Shiré. It seems to frequent trees." Bianconi has recorded it from Southern

Mozambique ; and on the west coast it has been obtained by Mr. Monteiro in Benguela and by Mr. Hamilton in the interior of Angola.

During the late Abyssinian expedition Mr. Jesse obtained an example at Taconda, which he kindly submitted to me ; and I found that, though it agreed in the main with South-African specimens, it had rather a longer tail, but was not otherwise specifically separable. Dr. von Heuglin, in his work on the ornithology of North-eastern Africa, says that it frequents only the hot wooded districts on the inclines of the Abyssinian highlands, such as, for instance, the slopes of the valleys round Arlet, Moreb, the districts of Wohni and Sarago (W. Abyssinia) and Fazogl. He adds :—"I can say but little respecting the habits of this shy forest-frequenting bird from personal experience. It does not wander, as Rüppell saw it in September and October, Brehm in March, and I in the early summer. In its habits it resembles in many respects the larger *Campephagæ*—sits upright, the head drawn in and with drooping tail, in the densest foliage of high trees, and watches for insects and caterpillars, which it catches with noiseless flight. Verreaux says that its food consists of Lepidoptera, various species of *Mantis*, and flies, but seldom beetles. Its note is a loud mournful cry. It is an excellent ventriloquist, and often seems to be far distant when quite near. In South Africa it breeds in October ; and the female is said to lay two or, rarely, three roundish, white, transparent eggs, and the young are said to be fledged in three weeks."

The figures represent a male and female, of the size of life.

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HAPALODERMA CONSTANTIA, Sharpe & Ussher.

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HAPALODERMA CONSTANTIA, *Sharpe & Ussher.*

West-African Trogon.

SPECIFIC CHARACTER.

Mas. *Similis* H. narinæ, sed rectrice extimâ purè albâ et tectricibus alarum canis tenuissimè nigro vermiculatis distinguendus.

Male.—General colour of the upper surface shining green, as well as the entire throat and fore neck, the green of these parts always having a kind of olive-golden lustre, changing to bright grass-green on the rump and upper tail-coverts; the four centre tail-feathers deep blue, with a narrow border of green; the two next bluish, shading off into brown; the terminal half pure white, increasing in extent on the penultimate feathers, the outermost being pure white excepting at the extreme base; all the wing-coverts (excepting the least ones, which are green like the back) and secondaries greyish white, extremely finely pencilled with black lines; primary coverts greyish black; primaries blackish, the outermost edged with white; under surface of body rich crimson; under wing-coverts greyish black, like the inner lining of the wing; bill light green; iris dark.

Total length $10\frac{1}{2}$ inches; wing $5\frac{1}{4}$; tail $6\frac{1}{4}$.

Hapaloderma narina. Cass. Pr. Philad. Acad. 1857, p. 38.

Trogon narina. Hartl. Orn. W.-Afr. p. 263.

Hapaloderma constantia. Sharpe & Ussher, Ibis, 1872, p. 181.

THIS beautiful species has long been known to ornithologists, but has been confounded with the Narina Trogon of South Africa, from which it is certainly specifically distinct. It is known at present only from the forest-regions of the Gold Coast and Gaboon, having been procured in the latter country by Du Chaillu. Riis sent specimens from Aguapim; and the typical examples were killed in the Denkera district of the Gold Coast by Mr. St. Thomas D. Aubinn, a native hunter in the employ of Governor Ussher, after whose daughter Constance the species is named.

The principal figure in the Plate is of the size of life, and has been drawn from one of the typical specimens kindly given to me by Mr. Bowdler Sharpe.

